

4

Docket No. G-045US02PCT
Serial No. 09/744,527Remarks

Claims 82-127 were pending in the subject application. Applicant acknowledges that claims 124-127 were been withdrawn from further consideration as being drawn to a non-elected invention. By this Amendment, Applicant has canceled claims 82-127 and presented new claims 128-137. Support for the new claims can be found throughout the subject specification and in the claims as originally filed (see, for example, page 47, lines 10-15, and previously presented claim 96). Entry and consideration of the new claims presented herein is respectfully requested. Accordingly, claims 128-137 are currently before the Examiner. Favorable consideration of the pending claims is respectfully requested.

As an initial matter, Applicant gratefully acknowledges the Examiner's withdrawal of the previous rejections under 35 U.S.C. §§ 102(e) and 102(b).

Claims 82-123 are rejected under 35 U.S.C. § 101 on the grounds that the claimed invention lacks a substantial utility. Applicant respectfully submits that the previously pending claims were supported by at least one substantial and credible utility, namely geranylgeranyl pyrophosphate synthetase activity. However, in the interest of expediting prosecution in this matter, Applicant has canceled claims 82-123. According, this rejection is moot. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 101 is respectfully requested.

Claims 82-123 are rejected under 35 U.S.C. § 112, first paragraph, as non-enabled by the subject specification and as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicant respectfully asserts that the claims are enabled by the specification and that there is adequate written description in the subject specification to convey to the ordinarily skilled artisan that they had possession of the claimed invention. However, in the interest of expediting prosecution in this matter, Applicant has canceled all the claims included under these rejections. Thus, these rejections are moot. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Claims 96 and 109 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Applicant respectfully asserts that the claims as filed are definite. However, by this Amendment,

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claims 96 and 109 have been canceled, thereby rendering this rejection moot. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Claims 82-123 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kuzuguchi *et al.* (1999) and/or Ping-Fan (U.S. Patent No. 5,849,882) and Riggs *et al.* (1994). Applicant respectfully asserts that the claimed invention is not anticipated by or obvious over the cited references, regardless of whether the references are taken alone or in combination. The Office Action states that the Kuzuguchi *et al.* reference discloses a human GGPPS that is 100% identical to SEQ ID NO: 4 of the instant invention. The Office Action further states that the Ping-Fan patent discloses making enzymatically active fragments of a protein by hydrolysis of the protein, containing about 5-75 amino acids. Finally, the Office Action indicates that Riggs *et al.* discloses fusing heterologous polypeptides to a protein of interest to facilitate expression and purification of said protein and concludes that it would have been obvious to an ordinarily skilled artisan to make fragments of SEQ ID NO: 4 having GGPPS activity and/or fuse fragments of SEQ ID NO: 4 having GGPPS activity to heterologous polypeptides in view of the combination of Kuzuguchi *et al.* with Ping-Fan and Riggs *et al.*

Applicant respectfully submits that the rejection of the claims as anticipated by Kuzuguchi *et al.* or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kuzuguchi *et al.* (1999) and/or Ping-Fan (U.S. Patent No. 5,849,882) and Riggs *et al.* (1994) has been improperly applied. Applicant notes that the subject application claims priority to U.S. provisional Application No. 60/093,940, filed July 23, 1998, which was filed about seven months prior to the publication date of the Kuzuguchi *et al.* reference. As shown in the attached alignment A1, SEQ ID NO: 6 of U.S. provisional Application No. 60/093,940 is 100% identical to SEQ ID NO: 4 of the subject application. U.S. provisional Application No. 60/093,940 also discloses hGGPS polypeptides comprising an amino acid sequence beginning at the amino acid in position 200 and ending at the amino acid 300 (see page 7, lines 27-32, of Application No. 60/093,940). U.S. provisional Application No. 60/093,940 further teaches that the GGPPS polypeptides have geranylgeranyl pyrophosphate synthetase activity (see, *e.g.*, the field of the invention at page 1 of U.S. provisional Application No. 60/093,940). Accordingly, it is respectfully submitted that Kuzuguchi *et al.* is not

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6

Docket No. G-045US02PCIT
Serial No. 09/744,527

available as prior art and reconsideration and withdrawal of the rejections under 35 U.S.C. §§ 102(b) and/or 103(a) is respectfully requested.

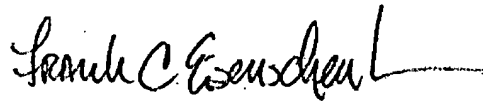
It should be understood that the amendments presented herein have been made solely to expedite prosecution of the subject application to completion and should not be construed as an indication of Applicant's agreement with or acquiescence in the Examiner's position. Applicant expressly reserves the right to pursue the invention(s) disclosed in the subject application, including any subject matter canceled or not pursued during prosecution of the subject application, in a related application.

In view of the foregoing remarks and amendments to the claims, Applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

Applicant invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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FCI/sj

Attachment: Alignment A1

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Alignment between
• SEQ ID NO: 4 of the present application
• SEQ ID NO: 6 of US 60/093,940

Program: needle
Rndate: Tue Nov 22 15:52:16 2005
Align_format: orspair
Report_file: /abi/extserv/old-work/needle-20051122-15521287816377.output
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Aligned_sequences: 2
1: SeqIdNo4
2: SeqIdNo6_PrioDoc
Matrix: BLOSUM62
Gap_penalty: 10.0
Extend_penalty: 0.5

Length: 300
Identity: 300/300 (100.0%)
Similarity: 300/300 (100.0%)
Gaps: 0/300 (0.0%)
Score: 1566.0

#####

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SeqIdNo6_Prio	1	MEKTSQSTVQRILLLEPYKYLLQLPGKQVKTILSQAFNHWLKVFDKLIQIII	50
SeqIdNo4	51	EVTENLHNASLLIIDIENSKLRGFPVAHSIYGIPSVINSANYVYFLGL	100
SeqIdNo6_Prio	51	EVTENLHNASLLIIDIENSKLRGFPVAHSIYGIPSVINSANYVYFLGL	100
SeqIdNo4	101	EKVLTLNHPDAVKLEFTROLLELHOGGGLDIYWRDNYTCPTSEYKAMVLQ	150
SeqIdNo6_Prio	101	EKVLTLNHPDAVKLEFTROLLELHOGGGLDIYWRDNYTCPTSEYKAMVLQ	150
SeqIdNo4	151	RTGGLFGLAVGLMQLFSDYKEDLKPPLNTLGLPFOIRDYANLHKEYSE	200
SeqIdNo6_Prio	151	RTGGLFGLAVGLMQLFSDYKEDLKPPLNTLGLPFOIRDYANLHKEYSE	200
SeqIdNo4	201	NKSFCEDLTEGKPSPTIHAWSRPESTQVQVILEQRTENIDIKKCYCVHY	250
SeqIdNo6_Prio	201	NKSFCEDLTEGKPSPTIHAWSRPESTQVQVILEQRTENIDIKKCYCVHY	250
SeqIdNo4	251	LEDVGSFEYTRNTLKKILAKAYKQIDARGONFELVALVHLSIMPKKEENS	300
SeqIdNo6_Prio	251	LEDVGSFEYTRNTLKKILAKAYKQIDARGONFELVALVHLSIMPKKEENS	300